WHAT IS CLAIMED IS:

1. A semiconductor laser device comprising:

a first conductivity-type semiconductor substrate;

a first conductivity-type lower clad layer deposited on the first conductivity-type semiconductor substrate;

a quantum well active layer deposited on the first conductivity-type lower clad layer and composed of a barrier layer and a well layer alternately stacked; and

a second conductivity-type upper clad layer deposited on the quantum well active layer, wherein

the quantum well active layer is doped with a second conductivity type of impurity.

2. A semiconductor laser device having an oscillation wavelength larger than 760 nm and smaller than 800 nm, the semiconductor laser device comprising:

a first conductivity-type GaAs substrate;

a quantum well active layer deposited on the first conductivity-type GaAs substrate, and composed of a barrier layer and a well layer alternately stacked which are made of an InGaAsP based material;

a second conductivity-type upper clad layer deposited on the quantum well active layer, wherein

the quantum well active layer is doped with Zn as a second conductivity type of impurity.

3. The semiconductor laser device as defined in Claim 2, wherein

a concentration of Zn doped in the quantum well active layer is $2 \times 10^{17}cm^{-3}$ or less.

4. The semiconductor laser device as defined in Claim 2, further comprising:

a guide layer made of an AlGaAs-based material and interposed between the quantum well active layer and the upper clad layer and between the quantum well active layer and the lower clad layer.

5. The semiconductor laser device as defined in Claim 4, wherein

a mixed crystal ratio of Al in the AlGaAs-based material that constitutes the guide layers is larger than 0.2.

6. The semiconductor laser device as defined in Claim 2, wherein

the well layer has a compressive strain.

7. The semiconductor laser device as defined in Claim 6, wherein

quantity of the compressive strain is 3.5% or less.

8. The semiconductor laser device as defined in Claim 6, wherein

the barrier layer has a tensile strain.

9. The semiconductor laser device as defined in Claim 8, wherein

quantity of the tensile strain is 3.5% or less.

10. An optical disk reproducing and recording unit comprising the semiconductor laser device as defined in Claim 1.

11. A semiconductor laser device comprising:

a first conductivity-type semiconductor substrate;

a first conductivity-type lower clad layer deposited on the first conductivity-type semiconductor substrate;

a quantum well active layer deposited on the first conductivity-type lower clad layer, and composed of a barrier layer and a well layer alternately stacked; and

a second conductivity-type upper clad layer deposited on the quantum well active layer, wherein

the quantum well active layer is doped with a first conductivity type of impurity.

12. A semiconductor laser device having an oscillation wavelength larger than 760 nm and smaller than 800 nm, the semiconductor laser device comprising:

a first conductivity-type GaAs substrate;

a first conductivity-type lower clad layer deposited on the first conductivity-type GaAs substrate;

a quantum well active layer deposited on the first conductivity-type lower clad layer, and composed of a barrier layer and a well layer alternately stacked which are made of an InGaAsP-based material; and

a second conductivity-type upper clad layer deposited on the quantum well active layer, wherein

the quantum well active layer is doped with Si as a first conductivity type of impurity.

13. The semiconductor laser device as defined in Claim 12, wherein

a concentration of Si doped in the quantum well active layer is $2 \times 10^{17} cm^{-3}$ or less.

14. The semiconductor laser device as defined in Claim 12, further comprising

a guide layer made of an AlGaAs-based material and interposed between the quantum well active layer and the upper clad layer and between the quantum well active layer and the lower clad layer.

15. The semiconductor laser device as defined in Claim 14, wherein

a mixed crystal ratio of Al in the AlGaAs-based material that constitutes the guide layers is larger than 0.2.

16. The semiconductor laser device as defined in Claim 12, wherein

the well layer has a compressive strain.

17. The semiconductor laser device as defined in Claim 16, wherein

quantity of the compressive strain is 3.5% or less.

18. The semiconductor laser device as defined in Claim 16, wherein

the barrier layer has a tensile strain.

19. The semiconductor laser device as defined in Claim 18, wherein

quantity of the tensile strain is 3.5% or less.

20. An optical disk reproducing and recording unit comprising the semiconductor laser device as defined in Claim 11.

21. A manufacturing method of a semiconductor laser device, comprising:

depositing a first conductivity-type lower clad layer on a first conductivity-type semiconductor substrate;

depositing a quantum well active layer on the first conductivity-type lower clad layer, the quantum well

active layer being composed of a barrier layer and a well layer alternately stacked; and

depositing a second conductivity-type upper clad layer on the quantum well active layer, wherein

the quantum well active layer is grown while being doped with a second conductivity type of impurity.

22. A manufacturing method of a semiconductor laser device having an oscillation wavelength larger than 760 nm and smaller than 800 nm, the manufacturing method comprising:

depositing a first conductivity-type lower clad layer on a first conductivity-type GaAs substrate;

depositing a quantum well active layer on the first conductivity-type lower clad layer, the quantum well active layer being composed of a barrier layer and a well layer alternately stacked which are made of an InGaAsP-based material; and

depositing a second conductivity-type upper clad layer on the quantum well active layer, wherein

the quantum well active layer is grown while being doped with Zn as a second conductivity type of impurity.

23. The manufacturing method of the semiconductor laser device as defined in Claim 22, wherein

Zn is so doped that a concentration thereof in the quantum well active layer is $2 \times 10^{17}cm^{-3}$ or less.

24. A manufacturing method of a semiconductor laser device, comprising:

depositing a first conductivity-type lower clad layer on a first conductivity-type semiconductor substrate;

depositing a quantum well active layer on the first conductivity-type lower clad layer the quantum well active layer being composed of a barrier layer and a well layer alternately stacked; and

depositing a second conductivity-type upper clad layer on the quantum well active layer, wherein

the quantum well active layer is grown while being doped with a first conductivity type of impurity.

25. A manufacturing method of a semiconductor laser device having an oscillation wavelength larger than 760 nm and smaller than 800 nm, the manufacturing method comprising:

depositing a first conductivity-type lower clad layer on a first conductivity-type GaAs substrate;

depositing a quantum well active layer on the first conductivity-type lower clad layer, the quantum well active layer being composed of a barrier layer and a well layer alternately stacked which are made of an InGaAsP-based material; and

depositing a second conductivity-type upper clad layer on the quantum well active layer, wherein

the quantum well active layer is grown while being doped with Si as a first conductivity type of impurity.

26. The manufacturing method of the semiconductor laser device as defined in Claim 25, wherein

Si is so doped that a concentration thereof in the quantum well active layer is $2 \times 10^{17}cm^{-3}$ or less.